APPENDIX

A. Public Health Insurance Eligibility for Pregnant Women and Children

Additional details on the federal legislation that expanded public health insurance eligibility for pregnant women and children may be found in Appendix Table 1.

As discussed in the paper, expansions for both groups served to delink public health insurance eligibility from participation in the Aid to Families with Dependent Children (AFDC) program. New rules extended Medicaid eligibility to pregnant women and children who met the financial standards for the AFDC program regardless of their family structure or participation in the program. These were followed by expansions in eligibility for pregnant women and children in families with incomes that exceeded the AFDC eligibility thresholds (i.e. "poverty-related" expansions).

To estimate Medicaid eligibility for pregnant women and children in the U.S., we use detailed eligibility rules compiled by state and year for under AFDC qualifying criteria, state Ribicoff rules and Medically Needy programs, and federal and state Medicaid expansions for the years prior to welfare reform. For 1997 forward, eligibility is calculated under the post-welfare reform eligibility rules for Medicaid family coverage ("Section 1931" eligibility), as well as under continuing state Medicaid expansions and new separate state programs funded by the Children's Health Insurance Program (CHIP). Additional details on the sources used to calculate eligibility for each of these pathways is provided below.

Eligibility is estimated using the date of the eligibility determination, child age, and family characteristics, including family structure, income, and information on parental employment. As described in the text, we constructed measures of state-level public health insurance eligibility while in utero and throughout childhood for each birth cohort (1979-1993) using the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS). To construct measures of prenatal Medicaid eligibility for cohorts born between 1979 and 1993, we used the 1980-1994 ASEC to estimate eligibility for prenatal coverage among women ages 15-44 in the event of a pregnancy during these birth years. Note that ASEC income measures used to determine Medicaid eligibility refer to the past calendar year.

We followed the existing literature and constructed a measure of "simulated eligibility" by computing the percentage of a national sample eligible for Medicaid and CHIP using state, year and age-specific eligibility rules. Computing eligibility using a national sample rather than state-specific samples allowed us to isolate state-level changes in public health insurance eligibility driven by changes in the rules governing eligibility rather than changes to underlying socio-economic or demographic trends. For each year, we drew a national sample of 3,000 women and estimated the fraction of this sample eligibility for prenatal coverage using state-specific eligibility rules for that year.

Childhood eligibility for each cohort was estimated in a similar manner. We used the 1980-2012 years of the ASEC to construct measures of eligibility for childhood public health insurance coverage by single year of age for cohorts born between 1979 and 1993. Since birth year is not available in the CPS, we assumed that birth year was equal to the calendar year minus age. We then summed the fraction of each birth cohort eligible across ages 1-18 in order to construct a cumulative measure of eligibility for these ages. This cumulative measure represents the average total number of years of public eligibility at ages 1-18.

We then drew a national sample of 1,000 children at each age during childhood for a given birth year. We then estimated the fraction of this national sample that would have been eligible for coverage in each state in order to create state-age-birth year measures of eligibility. Again, we summed the fraction eligible across ages in order to construct cumulative measures of eligibility at ages 1-18.

Source Information for Eligibility Rules

For the years 1979 to 1996, Medicaid eligibility is calculated under the eligibility rules for the AFDC and the AFDC-Unemployed Parents (AFDC-UP) programs, optional state programs (e.g. Ribicoff children, Medically Needy), and poverty-related expansions for pregnant women and children. For the years 1997 to 2012, public eligibility under Medicaid and CHIP are calculated under the rules for Medicaid Section 1931 eligibility, poverty-related Medicaid expansions and additional Medicaid expansions or new state programs under CHIP.

AFDC and AFDC-UP program parameters for 1979-1996 were provided by the Urban Institute through their Transfer Income Model, version 3 (TRIM3), which may be accessed at http://trim3.urban.org/T3Welcome.php. Using these parameters, we were able to calculate whether a family was eligible for either program based on state rules, monthly total family income and family size.

Optional state programs include Ribicoff children, under which children may meet the financial standards for AFDC but do not qualify on the basis of family structure. Information on Ribicoff children programs for 1988 forward were drawn from materials provided by Bruce Meyer and used in Meyer and Rosenbaum (2001). Rules for earlier years were drawn from the TRIM3 model, as well as from the 1983 Health Care Financing Administration (HCFA)'s *Analysis of State Medicaid Program Characteristics* report. In addition, state rules regarding coverage of unborn children under Ribicoff programs, which meant coverage of pregnant women whose income qualified them for AFDC, were taken from the 1983 HCFA report as well.

General information on state options for Medicaid coverage for pregnant women prior to 1985 was drawn from the Appendix in Currie and Gruber (1994). Detailed information on states exercising options under AFDC to cover women with a first-time pregnancy, options under AFDC-UP to cover pregnant women in a two-parent family where the principal earner is

unemployed, and later to provide pregnant women not yet qualifying for AFDC benefits with Medicaid were taken from the sources below.

- 1978-1981 *Characteristics of State Plans for Aid to Families with Dependent Children* reports published by the Department of Health and Human Services
- Hill IT. *Broadening Medicaid Coverage of Pregnant Women and Children*. Washington, DC: National Governors' Association; 1987.

State Medically Needy thresholds were drawn from TRIM3, Hill (1987), and the 1981, 1983, 1984, and 1986 *Medicare and Medicaid Data Books* issued by the Health Care Financing Administration.

Finally, information on federally mandated changes in eligibility were collected from a variety of sources (see Appendix Table 1). Information on expansions in eligibility by state, including the population targeted, implementation date, and income cutoffs under the poverty-related Medicaid - and later CHIP-related expansions - were compiled from the sources below. Income disregard rules by state and year were downloaded from the Urban Institute's TRIM3 database.

- Maternal and Child Update, National Governors Association: 9/97, 9/98, 2/99, 1/00, 2/01, 2/02, 2/03, 9/06, 11/08, and 1/11, accessed here: http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-health-publications/col2-content/main-content-list/maternal-and-child-health-mch-up.html
- Enrollment Increases in State CHIP Programs: December 1998 to June 1999, prepared by Vernon K. Smith at Health Management Associates for the Kaiser Commission on Medicaid and the Uninsured, July 30, 1999
- *Implementation of the State Children's Health Insurance Program: Momentum is Increasing After a Modest Start: First Annual Report*, January 2001 report prepared by Mathematica Policy Research, Inc. by Rosenbach, et al.
- Kaiser Commission on Medicaid and the Uninsured (mostly) annual surveys of state Medicaid/CHIP programs beginning in 2000: available for years 2000, 2002, 2003-2009, and 2011-2012 at http://www.kff.org/medicaid/50StateSurvey.cfm

B. Public Health Insurance Eligibility for Adults

When examining public health insurance eligibility for adults, we consider eligibility for low-income parents under Medicaid Section 1931 criteria in each state, as well as expanded eligibility for health care coverage for parents and childless adults under both waiver and state-funded programs. We also account for optional state expansions for low-income adults authorized under the Affordable Care Act. Information on state eligibility thresholds for coverage for adults for the years 1998-2014 were compiled from the sources listed below.

Federal law for family coverage under Section 1931 requires that states disregard at least $90 of earned income per month when assessing Medicaid eligibility (Birnbaum 2000). In 2000, most

states were using this minimum earnings disregard in eligibility determinations (Broaddus et al. 2001). Therefore, we chose to apply this rule for all states for the years 1998-2013. For 2014, a standard disregard of five percentage points of the federal poverty level is built into the eligibility thresholds.

- Maternal and Child Update, National Governors Association: 2002 through 2010 reports, accessed here: http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-health-publications/col2-content/main-content-list/maternal-and-child-health-mch-up.html
- Kaiser Commission on Medicaid and the Uninsured annual surveys of state Medicaid/CHIP programs: 2002-2005, 2007-2009, and 2011-2013 reports, accessed here: http://www.kff.org/medicaid/50StateSurvey.cfm
- Broaddus M, Blaney S, Dude A, Guyer J, Ku L, Peterson J. *Expanding Family Coverage: States' Medicaid Eligibility Policies for Working Families in the Year 2000*. Washington, DC: Center on Budget and Policy Priorities; 2001.
- Busch SH, Duchovny N. Family coverage expansions: Impact on insurance coverage and health care utilization of parents. *Journal of Health Economics*. 2005;24(5):876-890.
- Hearne J. *Medicaid Eligibility for Adults and Children*. Washington, DC: Congressional Research Service, The Library of Congress; 2005.
- Indiana Legislative Services Agency. *The Healthy Indiana Plan and Health Coverage of Childless Adults Across the States*. Indianapolis, IN: Health Finance Committee, Indiana Legislative Services Agency; 2011.
- National Conference of State Legislatures. State Health Programs to Covered the Uninsured, 2009-10. 2010. Available at: http://www.ncsl.org/research/health/state-health-programs-to-cover-the-uninsured-2009.aspx. Accessed May 19, 2014.
- National Conference of State Legislatures. Using Medicaid Dollars to Cover the Uninsured: States Use of Medicaid Dollars to Cover the Uninsured. 2009. Available at: http://echealthinsurance.com/public-assistance/medicaid-coverage-information/using-medicaid-dollars-to-cover-the-uninsured/. Accessed May 19, 2014.
- Somers SA, Hamblin A, Verdier JM, Byrd VL. *Covering Low-Income Childless Adults in Medicaid: Experiences from Selected States*. Center for Health Care Strategies, Inc.; 2010.

C. Additional Details on Construction of Variables and Analytic Sample by Survey

National Health Interview Survey

Within sampled households in the NHIS, all members are asked a set of questions on self-reported health and health care utilization that occurred within the last year. These responses are recorded in the "person" file. Among adult household members, a randomly selected subset ("sample adults") is given more detailed interviews. We use both the person file and the sample adult file to conduct our analysis. The outcome that we consider from the person file is the probability of reporting health status to be "very good" or "excellent". From the sample adult file, we examine the presence of chronic health conditions: obesity, diabetes, heart disease or a

heart attack, and high blood pressure. We also examine psychological distress as measured by the Kessler 6 scale, which is from the sample adult file.

Nationwide Inpatient Sample

These data contain a sample of approximately 20 percent of all community hospitals among states that contribute to the project. The data include information on diagnoses, procedures, patient demographics, and insurance status. In 1998, the first year of our sample, 22 states contributed to the NIS. By 2011, the last year of our sample, 46 states contributed.[1] Appendix Table A2 lists the states included in our sample in each year. We observe about 2.6 million hospital visits, excluding hospitalizations related to pregnancy and delivery, from patients in the relevant birth cohorts who are over the age of 18.

We observe the age of a patient and the date that he or she is admitted to the hospital, but not the patient's birth year. In order to merge NIS data with information on eligibility by birth year cohort, we assign birth year probabilistically to each patient using a method similar to the one described in Rotz (2012). If we observe a patient age A in admission year Y, the patient was either born in Y-A (if the patient's birthday is prior to the admission date) or Y-A-1 (if the patient's birthday is after the admission date). Patients who are observed earlier in the year are more likely to have been born in Y-A-1, whereas patients observed later in the year are more likely to have been born in Y-A. Assuming that the probability of being born in any specific quarter is 0.25, we can assign the probability of being born in Y-A using the age at admission and the date of admission. Conditioning on age at admission and admission quarter, we randomly assign a patient to birth year Y-A with probability .25 through 1.0, based on admission quarter, and birth year Y-A-1 with 1 minus these probabilities.

American Community Survey

Beginning in 2006, the ACS sample includes individuals residing in group quarters. We include these individuals in our analytic sample. However, due to potential concerns about the change in sample composition, we tested whether group quarter status was associated with prenatal Medicaid eligibility. We found no evidence of a significant association (results available from authors upon request).

D. Additional details on cost offset calculations

This section elaborates on the calculations described in the main text in footnote 40, which use changes in total visits, rather than changes in visits related to diabetes and obesity, to construct cost savings estimates. Using the point estimate reported in Table 4, column (2), we see that a 30 percentage point increase in in utero eligibility would reduce total hospitalizations by 18.4% x

0.30=5.5%. Given the baseline utilization rate of 374 hospitalizations per 10,000 individuals in our age range, this implies a reduction in hospitalizations of 20.6 per 10,000 population annually, or 7,816 fewer hospitalizations annually across all 3.8 million individuals in our cohorts. Between the ages of 19 and 32, this totals 109,424 hospitalizations. Average costs for these visits for our cohorts are about $8,135 per visit, implying a total cost savings of $890 million, or over 100% of the initial outlays for the prenatal Medicaid expansions.

E. Additional References

Birnbaum M. Expanding coverage to parents through Medicaid section 1931. *State Coverage Initiatives Program, Academy for Health Services Research and Health Policy*. 2000.

Broaddus M, Blaney S, Dude A, Guyer J, Ku L, Peterson J. *Expanding Family Coverage: States' Medicaid Eligibility Policies for Working Families in the Year 2000*. Washington, DC: Center on Budget and Policy Priorities; 2001.

Congressional Research Service. Medicaid Source Book: Background Data and Analysis. 1988.

Congressional Research Service. Medicaid Source Book: Background Data and Analysis. 1993.

Currie J, Gruber J. *Saving Babies: The Efficacy and Cost of Recent Expansions of Medicaid Eligibility for Pregnant Women*. National Bureau of Economic Research; 1994. Available at: http://www.nber.org/papers/w4644. Accessed May 2, 2014.

Currie J, Gruber J. Health Insurance Eligibility, Utilization of Medical Care, and Child Health. *The Quarterly Journal of Economics*. 1996;111(2):431-466.

Gruber J. Medicaid. In: Moffitt RA, ed. *Means-tested transfer programs in the United States*. NBER Conference Report; 2003.

The Kaiser Commission on Medicaid and the Uninsured. The Medicaid Resource Book. 2002

Table A.1. Federal Legislation Expanding Public Health Insurance Eligibility for Pregnant Women, Infants and Children

Year	Legislation	Date Effective	Mandatory Expansion	State Option
1984	Deficit Reduction Act, 1984 (DEFRA)	1-Oct-84	First-time pregnant women and those in two-parent families whose principal earner was unemployed, as well as children under age 5 born after September 30, 1983 whose families are income and resource eligible for AFDC	
1985	Consolidated Omnibus Budget Reconciliation Act, 1985 (COBRA)	1-Jul-86	Pregnant women whose families are income and resource eligible for AFDC	
1986	Omnibus Budget Reconciliation Act, 1986 (OBRA86)	1-Apr-87		Pregnant women and infants in families with incomes below 100% FPL
		1-Oct-87		Increase age level by 1 year each FY for all children under age 5 with incomes below 100% FPL
1987	Omnibus Budget Reconciliation Act, 1987 (OBRA87)	1-Jul-88		Pregnant women and infants in families with incomes below 185% FPL Children under age 2, 3, 4, or 5 and born after September 30, 1983 in families with incomes below 100% FPL
		1-Oct-88	Children under age 7 born after September 30, 1983 whose families are income and resource eligible for AFDC	Children under age 8 born after September 30, 1983 whose families are income and resource eligible for AFDC Children under age 8 born after September 30, 1983 with incomes below 100% FPL
1988	Medicare Catastrophic Coverage Act, 1988 (MCCA)	1-Jul-89	Pregnant women and infants in families with incomes below 75% FPL	
		1-Jul-90	Pregnant women and infants in families with incomes below 100% FPL	
1989	Omnibus Budget Reconciliation Act, 1989 (OBRA89)	1-Apr-90	Pregnant women and children under age 6 with family incomes below 133% FPL	
1990	Omnibus Budget Reconciliation Act, 1990 (OBRA90)	1-Jul-91	Children under age 19 born after September 30, 1983 with incomes below 100% FPL	
1996	Personal Responsibility and Work Opportunity Act of 1996 (PRWORA)	1-Jul-97	Established "Section 1931" family coverage category with minimum eligibility critera based on 1996 AFDC eligibility standards	Families with children at higher income levels
1997	Balanced Budget Act (BBA)	5-Aug-97		Children under age 19 in families with incomes below 200% FPL or higher

Notes: Legislative history is compiled from Congressional Research Service (1988, 1993), Kaiser Family Foundation (2002), Currie and Gruber (1994), Gruber (2003), and Broaddus et al. (2001).

Table A.2. Fraction of women age 15 to 44 eligible for prenatal Medicaid coverage for all states in selected years

State	Fraction Eligible, 1979	Fraction Eligible, 1987	Fraction Eligible, 1993
Alabama	0.10	0.16	0.41
Alaska	0.05	0.22	0.33
Arizona	0.02	0.13	0.39
Arkansas	0.12	0.25	0.44
California	0.24	0.29	0.61
Colorado	0.05	0.16	0.28
Connecticut	0.12	0.20	0.34
Delaware	0.04	0.14	0.42
District of Columbia	0.23	0.24	0.58
Florida	0.10	0.15	0.51
Geogia	0.04	0.14	0.35
Hawaii	0.19	0.19	0.68
Idaho	0.07	0.15	0.31
Illinois	0.14	0.21	0.32
Indiana	0.04	0.15	0.39
Iowa	0.05	0.21	0.39
Kansas	0.11	0.14	0.37
Kentucky	0.09	0.15	0.52
Louisiana	0.09	0.20	0.46
Maine	0.13	0.25	0.46
Maryland	0.14	0.17	0.33
Massachusetts	0.15	0.20	0.39
Michigan	0.14	0.25	0.43
Minnesota	0.10	0.22	0.60
Mississippi	0.06	0.30	0.59
Missouri	0.05	0.11	0.38
Montana	0.17	0.24	0.33
Nebraska	0.11	0.15	0.24
Nevada	0.09	0.13	0.26
New Hampshire	0.06	0.12	0.25
New Jersey	0.15	0.18	0.55
New Mexico	0.09	0.15	0.52
New York	0.22	0.24	0.47
North Carolina	0.09	0.11	0.44
North Dakota	0.09	0.13	0.32
Ohio	0.10	0.19	0.31
Oklahoma	0.11	0.15	0.47
Oregon	0.12	0.18	0.31
Pennsylvania	0.12	0.17	0.39
Rhode Island	0.19	0.18	0.47
South Carolina	0.14	0.21	0.54
South Dakota	0.06	0.20	0.32
Tennessee	0.08	0.27	0.44
Texas	0.04	0.13	0.49
Utah	0.09	0.30	0.26
Vermont	0.18	0.25	0.43
Virginia	0.09	0.15	0.25
Washington	0.18	0.23	0.36
West Virginia	0.08	0.38	0.46
Wisconsin	0.13	0.20	0.34
Wyoming	0.04	0.14	0.30

Table A.3. States Contributing to the Nationwide Inpatient Sample, by Year (excludes Arizona)

Year	States
1998	CA CO CT FL GA HI IL IA KS MD MA MO NJ NY OR PA SC TN UT WA WI
1999	CA CO CT FL GA HI IL IA KS MD MA ME MO NJ NY OR PA SC TN UT VA WA WI
2000	CA CO CT FL GA HI IL IA KS KY MD MA ME MO NC NJ NY OR PA SC TN TX UT VA WA WI WV
2001	AZ CA CO CT FL GA HI IL IA KS KY MD MA ME MI MN MO NC NE NJ NY OR PA RI SC TN TX UT VA VT WA WI WV
2002	CA CO CT FL GA HI IL IA KS KY MD MA ME MI MN MO NC NE NJ NY NV OH OR PA RI SC SD TN TX UT VA VT WA WI WV
2003	CA CO CT FL GA HI IL IN IA KS KY MD MA MI MN MO NC NE NH NJ NY NV OH OR PA RI SC SD TN TX UT VA VT WA WI WV
2004	AR CA CO CT FL GA HI IL IN IA KS KY MD MA MI MN MO NC NE NH NJ NY NV OH OR RI SC SD TN TX UT VA VT WA WI WV
2005	AR CA CO CT FL GA HI IL IN IA KS KY MD MA MI MN MO NC NE NH NJ NY NV OH OK OR RI SC SD TN TX UT VT WA WI WV
2006	AR CA CO CT FL GA HI IL IN IA KS KY MD MA MI MN MO NC NE NH NJ NY NV OH OK OR RI SC SD TN TX UT VA VT WA WI WV
2007	AR CA CO CT FL GA HI IL IN IA KS KY MD MA ME MI MN MO NC NE NH NJ NY NV OH OK OR RI SC SD TN TX UT VA VT WA WI WV WY
2008	AR CA CO CT FL GA HI IL IN IA KS LA KY MD MA ME MI MN MO NC NE NH NJ NY NV OH OK OR PA RI SC SD TN TX UT VA VT WA WI WV WY
2009	AR CA CO CT FL GA HI IL IN IA KS LA KY MD MA ME MI MN MO NT NC NE NH NJ NM NY NV OH OK OR PA RI SC SD TN TX UT VA VT WA WI WV WY
2010	AK AR CA CO CT FL GA HI IL IN IA KS LA KY MD MA ME MI MN MO MS MT NC NE NJ NM NY NV OH OK OR PA RI SC SD TN TX UT VA VT WA WI WV WY
2011	AK AR CA CO CT FL GA HI IL IN IA KS LA KY MD MA ME MI MN MO MS MT NC ND NE NJ NM NY NV OH OK OR PA RI SC SD TN TX UT VA VT WA WI WV WY

Notes: This table reports the states that contribute inpatient hospitalization data to the Nationwide Inpatient Sample during each year. This table excludes Arizona because it is not used in the analysis.

Table A.4. First-Stage Estimates for Each Analysis Sample

	Prenatal Eligibility	Eligibility at ages 1-18
National Health Interview Survey		
Simulated prenatal eligibility	0.983***	0.122
	(0.028)	(0.333)
Simulated eligibility at ages 1-18	-0.017***	0.905***
	(0.005)	(0.094)
Kleibergen-Paap Rank Statistic (p-value)	13.54 (0.0002)	
Nationwide Inpatient Sample		
Simulated prenatal eligibility	0.993***	0.166
	(0.0491)	(0.713)
Simulated eligibility at ages 1-18	-0.0136*	0.818***
	(0.00695)	(0.146)
Kleibergen-Paap Rank Statistic (p-value)	13.99 (0.0002)	
American Community Survey		
Simulated prenatal eligibility	0.982***	0.067
	(0.028)	(0.325)
Simulated eligibility at ages 1-18	-0.017**	0.912***
	(0.006)	(0.092)
Kleibergen-Paap Rank Statistic (p-value)	13.752 (0.0002)	
Summary Statistics, Eligibility Measures		
Average prenatal eligibility	0.22	
Average eligibility at ages 1-18	5.03	
Max prenatal eligibility	0.68 (Hawaii, 1993)	
Max eligibility at ages 1-18	15.48 (Connecticut, 1993)	
Min prenatal eligibility	0.02 (Nevada, 1979)	
Min eligibility at ages 1-18	0.99 (Wyoming, 1979)	

Notes: This table displays statistics from the first stage regressions of each eligibility measure on the simulated eligibility measures. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.5. Instrumental Variables and Reduced Form Estimates of the Effect of In Utero and Childhood Coverage on Later Life Outcomes

NHIS outcomes

	Chronic condition index	Components of index				Very good or excellent health	Kessler 6 score
		Diabetes	High blood pressure	Obesity	Heart attack or other heart disease		
Instrumental Variables							
Prenatal eligibility	-0.329***	-0.032**	-0.116**	-0.129	-0.043	-0.006	-0.840
	(0.108)	(0.016)	(0.046)	(0.086)	(0.034)	(0.041)	(0.840)
Eligibility at ages 1-18	0.009	0.004	0.007	-0.022	0.003	0.004	0.025
	(0.018)	(0.004)	(0.008)	(0.020)	(0.007)	(0.011)	(0.144)
Reduced Form							
Simulated prenatal eligibility	-0.323***	-0.031**	-0.113**	-0.129	-0.042	-0.005	-0.825
	(0.109)	(0.015)	(0.046)	(0.087)	(0.034)	(0.040)	(0.839)

NIS outcomes

	All visits (excl pregnancy-related)	Chronic condition related visits	Type of chronic condition visit		Mental health related visit
			Diabetes/obesity	High blood pressure/heart related	
Instrumental Variables					
Prenatal eligibility	-0.260**	-0.555*	-0.840**	-0.0309	0.0337
	(0.114)	(0.310)	(0.392)	(0.464)	(0.144)
Eligibility at ages 1-18	-0.0395	-0.0726	-0.128	-0.103	0.0275
	(0.0254)	(0.104)	(0.119)	(0.0936)	(0.0482)
Reduced Form					
Simulated prenatal eligibility	-0.265**	-0.553	-0.854*	-0.0556	0.0287
	(0.116)	(0.347)	(0.428)	(0.480)	(0.154)

ACS outcomes

	High school graduate	Some college or more	Personal Income (Logs)	Food Stamps
Instrumental Variables				
Prenatal eligibility	0.011**	0.014	0.061	-0.013
	(0.005)	(0.011)	(0.039)	(0.011)
Eligibility at ages 1-18	0.003	0.001	-0.008	0.006**
	(0.002)	(0.003)	(0.008)	(0.003)
Reduced Form				
Simulated prenatal eligibility	0.011**	0.014	0.056	-0.010
	(0.005)	(0.011)	(0.035)	(0.010)

Notes: This table displays instrumental variable and reduced form estimates using the labeled survey. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.6. Correlation Coefficients Measuring Correlation Between Measured Based on Actual and Imputed Birth Year

	NHIS	ACS
Birth Year	0.9976	0.9901
Simulated prenatal eligibility	0.9884	0.9714
Simulated eligibility ages 1-18	0.9938	0.9714
Prenatal eligibility	0.9861	0.9692
Eligibility ages 1-18	0.9902	0.9880

Notes: This table displays (row 1) and between eligibility and simulated eligibility at various ages assigned using actual birth year and imputed birth year (subsequent rows). These statistics are calculated by the authors using data from the 1998-2015 NHIS and 2000-2015 ACS.

Table A.7. Instrumental Variables Estimates of the Effect of In Utero and Infant Coverage on Moving from State of Birth, ACS 2000-2015

	Moved out of birth state		
	(1)	(2)	(3)
Prenatal eligibility	-0.016	-0.007	-0.018
	(0.019)	(0.022)	(0.012)
Region x birth year fixed effects		X	
State-specific birth year trends			X
Mean of dependent variable		0.29	
N		6,870,000	

Notes: This table displays instrumental variable regression results using the 2000-2015 American Community Survey. The number of observations is rounded to the nearest 10,000 following Census disclosure rules. Robust standard errors clustered by state of birth are in parentheses. All models include individual characteristics (sex, race, ethnicity, age dummies), state-year of birth control variables (see text), survey year, state of birth, and year of birth fixed effects. Models include region by year fixed effects or state-specific linear trends in birth year when indicated. All regressions are weighted. First stage is reported in Table A.3. Significance levels: * = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level.

Table A.8. Instrumental Variables Estimates of the Effect of Early Life Coverage, Alternative Model Specifications

National Health Interview Survey

	Chronic condition index	Components of index				Very good or excellent health	Kessler 6 score
		Diabetes	High blood pressure	Obesity	Heart attack or other heart disease		
Including contemporaneous adult eligibility							
Prenatal eligibility	-0.328***	-0.032**	-0.112**	-0.134	-0.041	-0.003	-0.801
	(0.108)	(0.016)	(0.045)	(0.085)	(0.035)	(0.040)	(0.838)
Including cumulative adult eligibility							
Prenatal eligibility	-0.333***	-0.032**	-0.118***	-0.132	-0.041	0.000	-0.843
	(0.106)	(0.015)	(0.045)	(0.088)	(0.034)	(0.041)	(0.843)
Including AZ							
Prenatal eligibility	-0.337***	-0.031**	-0.123***	-0.123	-0.045	-0.015	-0.851
	(0.107)	(0.015)	(0.046)	(0.084)	(0.035)	(0.042)	(0.824)
Excluding State x Year Control Variables							
Prenatal eligibility	-0.337***	-0.030**	-0.106***	-0.140*	-0.046	0.011	-1.267**
	(0.090)	(0.014)	(0.040)	(0.085)	(0.030)	(0.031)	(0.602)

Nationwide Inpatient Sample

	Any visit excl pregnancy-related visits	Chronic condition related visit	Type of chronic condition visit		Mental Health
			Diabetes/obesity	High blood pressure/heart related	
Including contemporaneous adult eligibility					
Prenatal eligibility	-0.258**	-0.515*	-0.794**	0.0402	0.0179
	(0.114)	(0.311)	(0.397)	(0.470)	(0.141)
Including cumulative adult eligibility					
Prenatal eligibility	-0.258**	-0.581*	-0.872**	-0.0536	0.0388
	(0.112)	(0.298)	(0.385)	(0.454)	(0.143)
Including AZ					
Prenatal eligibility	-0.259**	-0.609**	-0.897**	-0.0992	0.0339
	(0.111)	(0.304)	(0.382)	(0.464)	(0.149)
Excluding State x Year Control Variables					
Prenatal eligibility	-0.251**	-0.555*	-0.802**	0.0337	-0.0309
	(0.106)	(0.310)	(0.381)	(0.144)	(0.464)

American Community Survey

	High school graduate	Some college or more	Personal income (logs)	Food Stamps
Including contemporaneous adult eligibility				
Prenatal eligibility	0.011**	0.014	0.063	-0.013
	(0.005)	(0.011)	(0.039)	(0.011)
Including cumulative adult eligibility				
Prenatal eligibility	0.011**	0.014	0.047	-0.011
	(0.005)	(0.011)	(0.046)	(0.012)
Including AZ				
Prenatal eligibility	0.010*	0.011	0.062*	-0.012
	(0.005)	(0.011)	(0.037)	(0.010)
Excluding State x Year Control Variables				
Prenatal eligibility	0.035***	0.053***	0.151***	0.010
	(0.009)	(0.019)	(0.050)	(0.019)

Notes: This table displays instrumental variable estimates for the specified sensitivity test and survey. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year (except for in the last specification). NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year (expect for in the last specification). Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.9. Instrumental Variables Estimates of the Effect of In Utero and Childhood Eligibility on "Placebo" Conditions

	Appendicitis/Injury	Sickle Cell/Kidney Infect
Prenatal eligibility	-0.0543	0.138
	(0.123)	(0.475)
Incidence (per 10,000 individuals)	104.48	12.66
N	3413	2468

Notes: This table displays instrumental variable regression results using the 1998 to 2011 Nationwide Inpatient Sample discharges excluding cases where the primary diagnosis is related to pregnancy or delivery. Robust standard errors clustered by state are in parentheses. Dependent variable is the log of the number of visits by category for each state-year-birth cohort. States are excluded if there are zero discharges for any state-year-birth cohort observation. All models include state by year and birth year fixed effects, and state by birth year control variables (see text). Additionally, region by birth year fixed effects and state-specific linear trends in birth year are included where indicated. First stage is reported in Table A.4. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.10. Instrumental Variables Estimates of the Effect of Early Life Coverage, Age Groupings

National Health Interview Survey

	Chronic condition index	Components of index				Very good or excellent health	Kessler 6 score
		Diabetes	High blood pressure	Obesity	Heart attack or other heart disease		
Prenatal eligibility	-0.319***	-0.024	-0.121**	-0.156**	-0.032	0.004	-1.065
	(0.107)	(0.016)	(0.052)	(0.079)	(0.034)	(0.042)	(0.847)
Eligibility at ages 1-4	0.010	-0.004	0.022	0.032	-0.017	-0.005	0.343
	(0.040)	(0.007)	(0.019)	(0.025)	(0.013)	(0.020)	(0.244)
Eligibility at ages 5-9	0.042*	0.008*	0.024**	0.021	-0.013	0.029**	0.036
	(0.025)	(0.004)	(0.011)	(0.020)	(0.011)	(0.013)	(0.214)
Eligibility at ages 10-14	0.016	0.006	0.008	-0.034	0.010	0.001	0.043
	(0.025)	(0.004)	(0.012)	(0.021)	(0.008)	(0.012)	(0.190)
Eligibility at ages 15-18	0.004	0.006	0.003	-0.028	0.003	0.013	-0.120
	(0.020)	(0.004)	(0.010)	(0.022)	(0.008)	(0.013)	(0.159)

Nationwide Inpatient Sample

	Any visit excl pregnancy-related visits	Chronic condition related visit	Type of chronic condition visit		Mental Health
			Diabetes/obesity	High blood pressure/heart related	
Prenatal eligibility	-0.188	-0.568*	-0.857**	-0.0399	0.0719
	(0.122)	(0.306)	(0.403)	(0.420)	(0.157)
Eligibility at ages 1-4	-0.116***	0.0230	0.00333	0.00646	-0.0435
	(0.0391)	(0.184)	(0.235)	(0.152)	(0.0765)
Eligibility at ages 5-9	-0.00601	0.00341	-0.0196	0.0844	0.00384
	(0.0294)	(0.107)	(0.143)	(0.0888)	(0.0599)
Eligibility at ages 10-14	-0.00726	-0.0958	-0.167	-0.0786	0.0201
	(0.0245)	(0.0951)	(0.116)	(0.0822)	(0.0549)
Eligibility at ages 15-18	-0.0156	-0.0756	-0.125	-0.0840	0.0495
	(0.0293)	(0.0891)	(0.104)	(0.0801)	(0.0484)

American Community Survey

	High school graduate	Some college or more	Personal income (logs)	Food Stamps
Prenatal eligibility	0.021***	0.022	0.057	0.015
	(0.007)	(0.014)	(0.039)	(0.013)
Eligibility at ages 1-4	-0.002	-0.004	0.009	0.011
	(0.003)	(0.006)	(0.012)	(0.008)
Eligibility at ages 5-9	-0.002	-0.003	0.017***	0.000
	(0.001)	(0.003)	(0.006)	(0.003)
Eligibility at ages 10-14	-0.001	0.001	-0.006	-0.001
	(0.001)	(0.003)	(0.004)	(0.002)
Eligibility at ages 15-18	-0.001	0.002	-0.010*	-0.000
	(0.002)	(0.004)	(0.005)	(0.003)

Notes: This table displays instrumental variable estimates from a model with 5 endogeneous variables and 5 instruments. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.11. Instrumental Variables Estimates of the Effect of In Utero and Childhood Coverage on Later Life Outcomes, NIS 1998-2011 and ACS 2000-2015, Dependent Variable in Levels

NIS Outcomes

	All visits excluding pregnancy-related visits			Chronic condition related visits			Type of chronic condition visit						Mental health related visit		
							Diabetes/obesity related			High blood pressure/heart related					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Prenatal eligibility	-209.8	-217.4	19.59	-24.31	-15.19	-7.448	-22.76	-19.38	-13.58	-1.553	4.19	6.129	-1.592	-10.9	48.34
	(283.5)	(325.3)	(104.5)	(29.44)	(31.47)	(9.165)	(17.79)	(18.20)	(8.347)	(13.35)	(14.43)	(6.836)	(38.82)	(44.85)	(60.53)
Region x birth year fixed effects		X			X			X			X			X	
State-specific birth year trends			X			X			X			X			X
Incidence (per 10,000 individuals)		374.0			25.3			15.5			9.8			77.7	
N		3,527			2,836			2,653			2,221			2,643	

ACS Outcome

	Personal Income		
	(16.00)	(17.00)	(18.00)
Prenatal eligibility	3,879.773***	2,002.039*	1,500.026
	(1,214.829)	(1,057.291)	(956.574)
Region x birth year fixed effects		X	
State-specific birth year trends			X
Mean (Std. Dev)		$32,468.54 ($33,161.37)	
N			

Notes: ACS regression includes individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. The number of ACS observations is rounded to the nearest 10,000 following Census disclosure rules. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.12. Instrumental Variables Estimates of the Effect of In Utero and Infant Coverage on Health Care Utilization, NHIS 1998-2015

	Overnight hospital stay			ER Visit			10 or more doctor visits		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Prenatal eligibility	-0.019	-0.021	-0.001	-0.085*	-0.110	-0.048	-0.030	-0.063	-0.017
	(0.022)	(0.024)	(0.028)	(0.050)	(0.069)	(0.068)	(0.042)	(0.053)	(0.051)
Region x birth year fixed effects		X			X			X	
State-specific birth year trends			X			X			X
Mean of dependent variable		0.070			0.244			0.091	
N		141,431			59,705			60,238	

Notes: This table displays instrumental variable regression results using the 1998-2015 National Health Interview Survey. Robust standard errors clustered by state of birth are in parentheses. All models include individual characteristics (sex, race, ethnicity, age dummies), state-year of birth control variables (see text), survey year, state of birth, and year of birth fixed effects. Models include region by year fixed effects or state-specific linear trends in birth year when indicated. All regressions are weighted. First stage is reported in Table A.4. Significance levels: * = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level.

Table A.13. Instrumental Variables Estimates of the Effect of In Utero and Infant Coverage on Additional Outcomes

	NHIS									NIS			ACS		
	Presence of a chronic condition			BMI			Any health limitation			Preventable hospitalizations			College degree		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(7)	(8)	(9)	(7)	(8)	(9)
Prenatal eligibility	-0.128**	-0.127	-0.082	-2.222	-2.356	-1.994	-0.013	-0.016	0.004	-0.819***	-0.585**	-0.899***	0.004	0.022*	-0.012
	(0.063)	(0.090)	(0.068)	(1.585)	(1.641)	(1.505)	(0.019)	(0.019)	(0.021)	(0.262)	(0.283)	(0.288)	(0.017)	(0.011)	(0.021)
Region x birth year fixed effects		X			X			X			X			X	
State-specific birth year trends			X			X			X			X			X
Mean of dependent variable		0.245			26.409			0.0571			18.25 per 10,000 individuals			0.293	
N		60,211			58,948			141,538			2,871			3,760,000	

Notes: This table displays instrumental variable regression results for the specified outcome and survey. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. The number of ACS observations is rounded to the nearest 10,000 following Census disclosure rules. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.

Table A.14. Instrumental Variables Estimates of the Effect of In Utero and Infant Coverage Assigned by Average Eligibility During 9-Month Gestation Period Based on Birth Month

National Health Interview Survey

				Components of index											
	Chronic condition index			Diabetes			High blood pressure			Obesity			Heart attack or other heart disease		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Prenatal eligibility	-0.349***	-0.256**	-0.274**	-0.030**	-0.019	-0.027	-0.137***	-0.066	-0.131**	-0.130	-0.129	-0.111	-0.047	-0.054	-0.019
	(0.102)	(0.130)	(0.116)	(0.015)	(0.018)	(0.016)	(0.048)	(0.062)	(0.057)	(0.092)	(0.095)	(0.085)	(0.034)	(0.038)	(0.037)
Region x birth year fixed effects		X			X			X			X			X	
State-specific birth year trends			X			X			X			X			X
N		58,900			60,318			60,295			58,948			60,303	

	Very good or excellent health			Kessler 6 score		
	(16)	(17)	(18)	(19)	(20)	(21)
Prenatal eligibility	-0.002	0.024	0.001	-0.004	-0.001	0.010
	(0.037)	(0.047)	(0.044)	(0.023)	(0.028)	(0.032)
Region x birth year fixed effects		X			X	
State-specific birth year trends			X			X
Mean of dependent variable		0.753			2.67	
N		140,097			59,451	

American Community Survey

	High School Graduate			Some College or More			Personal Income (Logs)			Food Stamps		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Prenatal eligibility	0.028***	0.019**	0.012*	0.030***	0.005	0.008	-0.039	-0.120***	-0.153***	0.021	0.041***	0.000
	(0.007)	(0.008)	(0.006)	(0.010)	(0.013)	(0.009)	(0.048)	(0.046)	(0.042)	(0.015)	(0.014)	(0.013)
Region x birth year fixed effects		X			X			X			X	
State-specific birth year trends			X			X			X			X
N		6,870,000			6,310,000			3,360,000			3,760,000	

Notes: This table displays instrumental variable regression results using the NHIS and ACS when prenatal eligibility is assigned using a 9-month gestation period based on birth month. Robust standard errors clustered by state of birth are in parentheses. All models include individual characteristics (sex, race, ethnicity, age dummies), state-year of birth control variables (see text), survey year, state of birth, and year of birth fixed effects. Models include region by year fixed effects or state-specific linear trends in birth year when indicated. All regressions are weighted. Significance levels: * = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level.

Table A.15. Instrumental Variables Estimates of the Effect of In Utero and Infant Coverage on Alternative Health Measures in the NHIS

	Fair or poor health			Continuous self-reported health			Severe mental illness (K6>=13)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Prenatal eligibility	-0.002	-0.015	0.021	0.038	0.011	0.102	-0.012	-0.014	-0.003
	(0.020)	(0.027)	(0.019)	(0.071)	(0.092)	(0.086)	(0.024)	(0.029)	(0.033)
Region x birth year fixed effects		X			X			X	
State-specific birth year trends			X			X			X
Mean of dependent variable (std. dev.)		0.047			1.883 (0.862)			2.9	
N		140,097			140,097			59,451	

Notes: This table displays instrumental variable regression results using the 1998-2015 National Health Interview Survey. Robust standard errors clustered by state of birth are in parentheses. All models include individual characteristics (sex, race, ethnicity, age dummies), state-year of birth control variables (see text), survey year, state of birth, and year of birth fixed effects. Models include region by year fixed effects or state-specific linear trends in birth year when indicated. All regressions are weighted. First stage is reported in Table A.3. Significance levels: * = significant at the 10% level, ** = significant at the 5% level, *** = significant at the 1% level.

Table A.16. Instrumental Variables Estimates of the Effects of In Utero and Childhood Eligibility and their Interaction

NHIS outcomes

	Chronic condition index	Components of index				Very good or excellent health	Kessler 6 score
		Diabetes	High blood pressure	Obesity	Heart attack or other heart disease		
Prenatal eligibility	-0.873**	-0.005	-0.501*	-0.872***	0.154	0.265	-3.011
	(0.436)	(0.060)	(0.256)	(0.279)	(0.107)	(0.176)	(2.569)
Eligibility at ages 1-18	-0.001	0.004	0.000	-0.036*	0.007	0.010	-0.015
	(0.018)	(0.004)	(0.011)	(0.020)	(0.008)	(0.010)	(0.154)
Interaction	0.078	-0.004	0.055	0.106***	-0.028*	-0.039	0.311
	(0.061)	(0.008)	(0.040)	(0.040)	(0.015)	(0.026)	(0.371)

NIS outcomes

	All visits (excl pregnancy-related)	Chronic condition related visits	Type of chronic condition visit		Mental health related visit
			Diabetes/obesity	High blood pressure/heart related	
Prenatal eligibility	-0.153	-1.609	-2.887**	-1.510	-0.388
	(0.331)	(1.210)	(1.364)	(2.017)	(0.763)
Eligibility at ages 1-18	-0.0392	-0.0654	-0.118	-0.0963	0.0298
	(0.0255)	(0.102)	(0.114)	(0.0899)	(0.0493)
Interaction	-0.0204	0.193	0.372	0.253	0.0815
	(0.0577)	(0.207)	(0.242)	(0.370)	(0.140)

ACS outcomes

	High school graduate	Some college or more	Personal Income (Logs)	Food Stamps
Prenatal eligibility	-0.008	0.005	0.269**	-0.089**
	(0.026)	(0.040)	(0.107)	(0.037)
Eligibility at ages 1-18	0.003	0.000	-0.005	0.005*
	(0.002)	(0.003)	(0.009)	(0.003)
Interaction	0.003	0.001	-0.034*	0.012**
	(0.003)	(0.006)	(0.018)	(0.006)

Notes: This table displays instrumental variable estimates using the labeled survey. NHIS and ACS regressions include individual characteristics, state of birth, year of birth, survey year dummies, state of birth by birth year characteristics, and state of birth trends in birth year. NIS regressions include include state by year and birth year fixed effects, state by birth year control variables, and state trends in birth year. Significance levels: * = significant at the 10% level, **= significant at the 5% level, ***=significant at the 1% level.